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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,129	07/09/2003	Peter Reginald Clarke	P6668	2228

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FLEIT, KAIN, GIBBONS, GUTMAN, BONGINI
& BIANCO P.L.
ONE BOCA COMMERCE CENTER
551 NORTHWEST 77TH STREET, SUITE 111
BOCA RATON, FL 33487

EXAMINER	
EWALD, MARIA VERONICA	
ART UNIT	PAPER NUMBER
1722	

DATE MAILED: 06/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/616,129	CLARKE, PETER REGINALD	
	Examiner	Art Unit	
	Maria Veronica D. Ewald	1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-21 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-21 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 7/9/03 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 7/9/03&5/16/05.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

13. Acknowledgment is made of applicant's claim for foreign priority based on applications filed in the United Kingdom on 1/26/2001 and 1/25/2002, respectively. It is noted, however, that applicant has not filed certified copies of the 0102026.2 and PCT/GB02/00334 applications as required by 35 U.S.C. 119(b).

Claim Rejections - 35 USC § 112

14. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 1 – 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 states "...one or more valves...to be filled with a desired dose of a plastics melt by the feeding passage with the plastic melt entering the mold cavities and for subsequently enabling the desired doses of plastic melt when ejected from the cylinder by the piston to flow from the cylinder to the respective mold cavities without being returned to the feeding passage." The text above includes words "to be filled," "...plastic melt entering the mold cavities," "...enabling the desired doses...when ejected ...to flow from the cylinder to the respective mold cavities without being returned..." which impose method/process limitations to the apparatus

and do not provide any further physical limitations to such apparatus and thus, render the claims indefinite.

Similarly, claims 14 – 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 14 states "...one or more valves...to be filled with a desired dose of a plastics melt by the feeding passage without the plastic melt entering the mold cavities...enabling the desired dose of plastics melt when ejected from the cylinder by the single acting piston to flow from the cylinder...without being returned to the feeding passage." The text above includes words "to be filled," without the plastic melt entering the mold cavities," "...enabling the desired doses...when ejected ...to flow from the cylinder to the respective mold cavities without being returned..." which impose method/process limitations to the apparatus and do not provide any further physical limitations to such apparatus, and thus, render the claims indefinite.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Arnott (U.S. 5,260,012). Arnott teaches an assembly for use with a multi-cavity mold

comprising a block (figure 3) interposed between at least one feeding passage (item 60 – figure 3; column 4, line 18) connected to one or more mold cavities (item 64 – figure 3; column 4, lines 28 – 29); at least one cylinder (item 71, 72 – figure 3) formed in the block for each of the mold cavities, a single acting piston reciprocably mounted in each cylinder with an adjustable stop associated with each piston for enabling a predetermined quantity of the plastics melt injected into at least one of the cavities to be set independently of the other cavities (items 37 – 40, figure 1; item 74 – figure 3; column 3, lines 55 – 58). In addition, the reference teaches that the block includes a first passage (item 63 – figure 3; column 4, lines 20 – 21) to connect the cylinder to the feeding passage, a second passage to connect the cylinder to each of the mold cavities (item 73 – figure 3; column 4, lines 49 – 50), and one or more spool valves (items 19 – 22, figure 1; items 75,76 – figure 3) for enabling the cylinder (items 23 – 26, figure 1; column 3, line 43, 45) in addition to the respective mold cavities (items 11 – 14, figure 1; column 3, line 42, 45) to be filled with a desired dose of plastics melt. The spool valves are operated to close communication between the cylinder and mold cavity (column 4, lines 54 – 55). Furthermore, the reference teaches that the spool valves have a first position that allows communication only between the cylinder and the feeding passage and a second position that allows communication between the cylinder and the mold cavity (column 3, lines 55 – 60; column 4, lines 52 – 58). Arnott also teaches that there is an actuator for advancing the pistons (column 5, lines 34 – 35). Furthermore, the surface of the pistons is in direct contact with the plastic melt to be fed (items 23 – 26, 37 – 40, figure 1; column 3, lines 43, 54 - 56; column 4, lines 50 – 51).

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3, 5, 8, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnott in view of Kazmer, et al. (U.S. 6,343922). Arnot teaches the characteristics previously described but do not teach that the actuator be hydraulic, pneumatic or electro-mechanical.

In a method to mold plastic melt using an injection molding apparatus, Kazmer, et al. teach that the molding system have a piston housed in a cylinder operated by a hydraulic actuator (column 3, lines 35 – 40). The piston has a valve pin threadably mounted on it, so as the piston moves, the valve pin also moves (column 3, lines 40 – 41). The piston-actuator assembly is necessary for the purpose of controlling the flow of plastic melt into the mold cavity (column 3, line 30).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the injection system of Arnott to include the hydraulic actuator of Kazmer, et al. for the purpose of controlling the flow of plastic melt into the mold cavity, as taught by Kazmer, et al. (column 3, line 30).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arnott in view of Svoboda (U.S. 4,756,683). Arnott teaches the characteristics previously described but do not teach that the valves be non-return valves.

In a method to mold articles from thermoplastic or polymeric material, Svoboda teaches a pressure-aided injection molding apparatus which uses a non-return valve (column 5, line 29) for the purpose of preventing even a slight return of plastic melt into the transport and mixing screw conveyor (column 5, lines 19 – 21).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the injection system of Arnott with the non-return valve of Svoboda to ensure that plastic melt flows only in the direction of the cylinder from the feeding passage and does not flow back to the mixing screw conveyor as taught by Svoboda (column 5, line 21).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arnott in view of Kazmer, et al. and further in view of Svoboda. Arnott and Kazmer, et al. teach the characteristics previously described but do not teach that the valves be non-return valves.

In a method to mold articles from thermoplastic or polymeric material, Svoboda teaches a pressure-aided injection molding apparatus which uses a non-return valve (column 5, line 29) for the purpose of preventing even a slight return of plastic melt into the transport and mixing screw conveyor (column 5, lines 19 – 21).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the injection system of Arnott with the hydraulic actuator of Kazmer, et al. to further include the non-return valve of Svoboda to ensure that plastic melt flows only in the direction of the cylinder from the feeding passage and does not flow back to the mixing screw conveyor as taught by Svoboda (column 5, line 21).

Claims 11 – 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnott in view of Kazmer, et al. and further in view of Styczynski (U.S. 6,113,827). Arnott and Kazmer, et al. teach the characteristics previously described but do not teach that the actuator be part of a platen and that the axis of the cylinder be parallel to the relative movement of the platen.

In a method to mold and cure silicone, Styczynski teaches an injection molding apparatus with an actuator as part of a platen (item 7 – figures 1, 2) which when moved to a position closer to the mold cavities defines a minimum mold cavity volume (column 5, lines 30 – 31), the piston is urged to eject the desired doses of plastic from the cylinder (column 4, lines 50 – 51; column 5, lines 37 – 40). Furthermore, the reference teaches that the axis of the cylinder is parallel to the relative movement of the platen (column 4, lines 34 – 35, 55 – 56).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the injection system of Arnott with the hydraulic actuator of Kazmer, et al. to further include the platen assembly of Styczynski

for the purpose of defining a mold cavity and then subsequently ejecting material into the cavity to form a product.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arnott in view of Kazmer, et al. and further in view of Matsuda, et al. (U.S. 4,519,763). Arnott and Kazmer, et al. teach the characteristics previously; however, do not teach that the axis of the cylinder be normal to the relative movement of the platen.

In a method to form molten resin, Matsuda, et al. teach an injection molding apparatus with movable and stationary platens. The reference further teaches that there is a cylinder (item 7 – figures, 5, 6 and 8a) perpendicular to the movement of the plates. The cylinder is actuated to regulate the space between the plates during mold clamping (column 5, lines 32 – 33). Furthermore, when the cylinder has been actuated to the desired position, the faces of the stationary and movable plates abut each other and molten resin is then injected into the formed cavity (column 7, lines 7 – 10).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the injection system of Arnott with the hydraulic actuator of Kazmer, et al. to further include the platen assembly of Matsuda, et al. for the purpose of regulating the space between the plates during mold clamping depending on the article to be formed, as taught by Matsuda, et al. (column 5, lines 32 – 33).

17. Claims 14 – 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Styczynski in view of Arnott and further in view of Kazmer, et al. Styczynski teaches an injection molding apparatus with a mold part comprising one or more mold cavities (item 19 – figure 2; column 4, line 5), wherein the mold cavities are connected to at least one or more feeding passages (column 4, line 6 – 7) and a pressure plate movable relative to the first mold part between a first end position and a second end position (item 3 – figure 2; column 4, lines 25 – 27;column 5, lines 21 – 24, 30, 35 - 37). Furthermore, the reference teaches that the axis of the cylinder is parallel to the relative movement of the platen (column 4, lines 34 – 35, 55 – 56). However, Styczynski does not teach that the injection molding apparatus have a block with a cylinder to house a piston and does not teach that the actuator for the piston be selected from a group of hydraulic, pneumatic or electro-mechanical actuators.

In a method to control the flow of plastics melt into a mold cavity, Arnott teaches an assembly for use with multi-cavity mold comprising a block (figure 3) including at least one cylinder (item 71, 72 – figure 3) formed in the block for each of the mold cavities, a single acting piston reciprocably mounted in each cylinder with a stop associated with each piston for enabling a quantity of the plastics melt to be injected into the cavities (items 37 – 40, figure 1; item 74 – figure 3; column 3, lines 55 – 58). In addition, the reference teaches that the block includes a first passage (item 63 – figure 3; column 4, lines 20 – 21) to connect the cylinder to the feeding passage, a second passage to connect the cylinder to each of the mold cavities (item 73 – figure 3; column 4, lines 49 – 50), and one or more spool valves (items 19 – 22, figure 1; items 75,76 –

figure 3) for enabling the cylinder (items 23 – 26, figure 1; column 3, line 43, 45) in addition to the respective mold cavities (items 11 – 14, figure 1; column 3, line 42, 45) to be filled with a desired dose of plastics melt. The spool valves are operated to close communication between the cylinder and mold cavity (column 4, lines 54 – 55). Furthermore, the reference teaches that the spool valves have a first position that allows communication only between the cylinder and the feeding passage and a second position that allows communication between the cylinder and the mold cavity (column 3, lines 55 – 60; column 4, lines 52 – 58). Arnott also teaches that there is an actuator for advancing the pistons (column 5, lines 34 – 35).

In a method to mold plastic melt using an injection molding apparatus, Kazmer, et al. teach that the molding system have a piston housed in a cylinder operated by a hydraulic actuator (column 3, lines 35 – 40). The piston has a valve pin threadably mounted on it, so as the piston moves the valve pin also moves (column 3, lines 40 – 41). The piston-actuator assembly is necessary for the purpose of controlling the flow of plastic melt into the mold cavity (column 3, line 30).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the injection system of Styczynski to include the assembly of Arnott with the hydraulic actuator of Kazmer, et al. for the purpose of controlling the quantity of plastics melt into the mold cavities (on a cavity-by-cavity basis) as taught by both Arnott (column 3, lines 55 – 58) and Kazmer, et al. (column 3, line 30).

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Styczynski in view of Arnott and further in view of Svoboda. Styczynski and Arnott teach the characteristics previously described but do not teach that the valves be non-return valves.

In a method to mold articles from thermoplastic or polymeric material, Svoboda teaches a pressure-aided injection molding apparatus which uses a non-return valve (column 5, line 29) for the purpose of preventing even a slight return of plastic melt into the transport and mixing screw conveyor (column 5, lines 19 – 21).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the injection system of Styczynski with the assembly of Arnott and to further include the non-return valve of Svoboda to ensure that plastic melt flows only in the direction of the cylinder from the feeding passage and does not flow back to the mixing screw conveyor as taught by Svoboda (column 5, line 21).

Claim 21 is rejected as being unpatentable over Styczynski in view of Arnott and Kazmer, et al. and further in view of Matsuda, et al. Styczynski, Arnott and Kazmer, et al. teach the characteristics previously described, but do not teach that the axis of the cylinder be normal to the relative movement of the platen.

In a method to form molten resin, Matsuda, et al. teach an injection molding apparatus with movable and stationary platens. The reference further teaches that there is a cylinder (item 7 – figures, 5, 6 and 8a) perpendicular to the movement of the plates. The cylinder is actuated to regulate the space between the plates during mold clamping

(column 5, lines 32 – 33). Furthermore, when the cylinder has been actuated to the desired position, the faces of the stationary and movable plates abut each other and molten resin is then injected into the formed cavity (column 7, lines 7 – 10).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the injection system of Styczynski with the assembly of Arnott and the hydraulic actuator of Kazmer, et al. to further include the platen assembly of Matsuda, et al. for the purpose of regulating the space between the plates during mold clamping depending on the article to be formed, as taught by Matsuda, et al. (column 5, lines 32 – 33).

Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Veronica D. Ewald whose telephone number is 571-272-8519. The examiner can normally be reached on M-F, 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Joseph S Del Sole
6/21/05

MVE

Joseph S. Del Sole